

circuit and supports the contact studs, is sealed to an additional protective layer using a sealing layer.

6. (Amended) The portable object of smartcard type according to claim 5, wherein said interface circuit is located in the additional protective layer.

7. (Amended) A microcontroller intended to be incorporated in a portable object of smartcard type, comprises:

- a contact stud to supply the said microcontroller with current;
- a data input and/or output contact stud;
- a part to carry out data processing;
- confidential information;

wherein said microcontroller comprises an interface circuit through which the part to carry out data processing receives a supply voltage, the said interface circuit being designed to vary the supply voltage of the part to carry out data processing in order to secure the said confidential data against current attacks.

REMARKS

The amendments to the specification and the claims are made to conform to the requirements for patent applications in the United States. No new matter was introduced by such amendments. Favourable consideration of this application is respectfully requested.

Please apply any charges not covered, or any credits, to Deposit Account 50-0591 (Reference Number 09669/019001).

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Date: _____

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[Signature]

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Marked-Up Version of ClaimsIN THE CLAIMS:

1. [Portable] A portable object [(1)] of [type] smartcard type , [comprising]
comprises:
 - a microcontroller [(30)] comprising [an efficient] a part [(μ CE)] to carry out data processing;
 - a contact stud [(VCC)] to supply the said microcontroller [(30)] with a current;
 - a data input and/or output contact stud [(I/O)];
 - confidential information;[characterised in that the] wherein said portable object [also includes] further comprises:
 - an interface circuit [(GEN, CAP, COM)] through which the [efficient] part [(μ CE)] to carry out data processing receives a supply voltage [(V μ CE)], the said interface circuit [(GEN, CAP, COM)] being designed to vary the supply voltage of the [efficient data processing] part [(μ CE)] to carry out data processing in order to secure the said confidential data against current attacks.
2. [Portable] The portable object of [type] smartcard type according to claim 1 [characterised in that] wherein the interface circuit includes:
 - a switch [(COM)] between the said contact stud [(VDD)] and a supply terminal of the [efficient data processing] part to carry out data processing [(μ CE)];
 - a capacitor [(CAP)] connected between the said supply terminal of the [efficient] part to carry out data processing of the microcontroller [(μ CE)] and another supply terminal of the [efficient] part to carry out data processing [(μ CE)].
3. [Portable] The portable object of [type] smartcard type according to claim 2, [characterised in that] wherein the interface circuit comprises a pulse generator [(GEN)] to control the switch [(COM)] in a desynchronised manner with respect to the said data processing.

4. [Portable] The portable object of [type] smartcard type according to claim 2 [or claim 3 characterised in that], wherein the capacitor has a capacitance greater than 1 nanofarad.

5. [Portable] The portable object of [type] smartcard type according to claim 1 [characterised] wherein the microcontroller comprises a main layer [(301)] of silicon whose active face, which comprises a circuit and supports the contact studs [(300)], is sealed to an additional protective layer [(302)] using a sealing layer [(303)].

6. [Portable] The portable object of [type] smartcard type according to claim 5 [characterised in that the], wherein said interface circuit [(COM, GEN, CAP)] is located in the additional protective layer [(302)].

7. [Microcontroller] A microcontroller [(30)] intended to be incorporated in a portable object [(1)] of [type] smartcard type, [comprising] comprises:

a contact stud [(VCC)] to supply the said microcontroller [(30)] with current;

a data input and/or output contact stud [(I/O)];

[an efficient] a part [(μ CE)] to carry out data processing;

confidential information;

[characterised in that] wherein said microcontroller comprises an interface circuit [(COM, GEN, CAP)] through which the [efficient] part [(μ CE)] to carry out data processing receives a supply voltage [$V(\mu$ CE)], the said interface circuit [(COM, GEN, CAP)] being designed to vary the supply voltage of the [efficient data processing] part [(μ CE)] to carry out data processing in order to secure the said confidential data against current attacks.

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APPLICATION
FOR
UNITED STATES LETTERS PATENT

**TITLE: MICRO-CONTROLLER PROTECTED AGAINST
CURRENT ATTACKS**

APPLICANT: Robert LEYDIER

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